

Appl. No.: 09/913,377
Group Art Unit: 1616
Response to Paper No. 9

In the Claims:

Please amend claims 35-37, without prejudice, as shown below in the following complete listing of all claims ever presented. This listing of claims replaces all prior versions, and listings, of the claims in the instant application:

Claims 1-8 (Cancelled)

Claim 9 (Previously Presented): A process for preparing phytosterols, said process comprising:

- (a) providing a liquid phytosterol starting material obtained by transesterification of a distillation residue with an alkanol;
- (b) dissolving the liquid phytosterol starting material in a hydrocarbon solvent; and
- (c) crystallizing a phytosterol product, wherein the phytosterol product is substantially citrostadienol-free.

Claim 10 (Previously Presented): The process according to claim 9, wherein the distillation residue comprises a deodorizer condensate obtained from fatty acid methyl ester production.

Claim 11 (Previously Presented): The process according to claim 10, wherein the deodorizer condensate is derived from an oil selected from the group consisting of rapeseed oil and sunflower oil.

Claim 12 (Previously Presented): The process according to claim 11, wherein the oil comprises sunflower oil.

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Claim 13 (Previously Presented): The process according to claim 9, wherein the distillation residue comprises tall oil pitch.

Claim 14 (Previously Presented): The process according to claim 9, wherein the alkanol comprises methanol.

Claim 15 (Previously Presented): The process according to claim 11, wherein the alkanol comprises methanol.

Claim 16 (Previously Presented): The process according to claim 9, wherein the liquid phytosterol starting material is maintained at a temperature of from 60°C to 80°C prior to and during dissolution in the hydrocarbon solvent.

Claim 17 (Previously Presented): The process according to claim 11, wherein the liquid phytosterol starting material is maintained at a temperature of from 60°C to 80°C prior to and during dissolution in the hydrocarbon solvent.

Claim 18 (Previously Presented): The process according to claim 16, wherein the liquid phytosterol starting material is maintained at a temperature of from 65°C to 70°C.

Claim 19 (Previously Presented): The process according to claim 17, wherein the liquid phytosterol starting material is maintained at a temperature of from 65°C to 70°C.

Claim 20 (Previously Presented): The process according to claim 9, wherein the hydrocarbon solvent comprises a linear or branched alkane isomer selected from the group consisting of pentane, hexane, heptane, octane, nonane, decane, and mixtures thereof.

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Claim 21 (Previously Presented): The process according to claim 9, wherein the hydrocarbon solvent comprises a linear or branched alkane isomer selected from the group consisting of hexane, heptane, and mixtures thereof.

Claim 22 (Previously Presented): The process according to claim 9, wherein methanol is combined with the hydrocarbon solvent prior to crystallization.

Claim 23 (Previously Presented): The process according to claim 22, wherein the methanol is present in an amount of from 1 to 15 % by weight, based on the hydrocarbon solvent.

Claim 24 (Previously Presented): The process according to claim 11, wherein methanol is combined with the hydrocarbon solvent prior to crystallization.

Claim 25 (Previously Presented): The process according to claim 24, wherein the methanol is present in an amount of from 1 to 15 % by weight, based on the hydrocarbon solvent.

Claim 26 (Previously Presented): The process according to claim 16, wherein methanol is combined with the hydrocarbon solvent prior to crystallization.

Claim 27 (Previously Presented): The process according to claim 26, wherein the methanol is present in an amount of from 1 to 15 % by weight, based on the hydrocarbon solvent.

Claim 28 (Previously Presented): The process according to claim 9, wherein crystallizing the phytosterol product comprises cooling the liquid phytosterol starting material in the hydrocarbon solvent to a temperature of below about 30°C.

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Claim 29 (Previously Presented): The process according to claim 9, wherein crystallizing the phytosterol product comprises cooling the liquid phytosterol starting material in the hydrocarbon solvent to a temperature of from about 25°C to about 30°C.

Claim 30 (Previously Presented): The process according to claim 11, wherein crystallizing the phytosterol product comprises cooling the liquid phytosterol starting material in the hydrocarbon solvent to a temperature of below about 30°C.

Claim 31 (Previously Presented): The process according to claim 11, wherein crystallizing the phytosterol product comprises cooling the liquid phytosterol starting material in the hydrocarbon solvent to a temperature of from about 25°C to about 30°C.

Claim 32 (Previously Presented): The process according to claim 9, wherein the phytosterol product has a citrostadienol content of less than 0.5% by weight.

Claim 33 (Previously Presented): The process according to claim 9, wherein the phytosterol product has a citrostadienol content of less than 0.2% by weight.

Claim 34 (Previously Presented): A process for preparing phytosterols, said process comprising:

(a) providing a liquid phytosterol starting material obtained by transesterification of a distillation residue with methanol, wherein the distillation residue comprises a deodorizer condensate derived from sunflower oil;

(b) dissolving the liquid phytosterol starting material in a hydrocarbon solvent, the hydrocarbon solvent comprising a linear or branched alkane isomer selected from the group consisting of hexane, heptane, and mixtures thereof, wherein the liquid phytosterol starting

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material is maintained at a temperature of from 60°C to 80°C prior to and during dissolution in the hydrocarbon solvent; and

(c) crystallizing a phytosterol product via cooling the liquid phytosterol starting material in the hydrocarbon solvent to a temperature of below about 30°C, wherein methanol is combined with the hydrocarbon solvent prior to crystallization in an amount of from 1 to 15 % by weight, based on the hydrocarbon solvent, and wherein the phytosterol product has a citrostadienol content of less than 0.5% by weight..

Claim 35 (Currently Amended): A product phytosterol prepared by the process according to claim 9, wherein a major portion of the product comprises a phytosterol.

Claim 36 (Currently Amended): A product phytosterol prepared by the process according to claim 34, wherein a major portion of the product comprises a phytosterol.

Claim 37 (Currently Amended): A composition comprising a major portion of one or more natural phytosterol compounds, wherein the composition has a citrostadienol content of 0.5% by weight or less.